

THE DISTRIBUTION OF EUROPEAN RABBITS (*ORYCTOLAGUS CUNICULUS*), IN WESTERN AUSTRALIA

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Introduction of European Rabbits (*Oryctolagus cuniculus*) into Western Australia occurred on a number of occasions at localities along the south and west coasts in the late 19th century (Long 1988). The resulting populations seem to have remained localized, and the main spread of rabbits into the state from eastern Australia did not occur until 1894 when they were first sighted at Eucla (Long 1988, Ratcliffe 1959). They spread to the west coast by the 1920's (Myers 1971) and had apparently colonized all the suitable areas of the State by the 1930's (Long 1988).

This paper reports on the current distribution of rabbits in Western Australia as they are known to occur outside the ranges given in earlier publications (Myers and Parker, 1965; Myers, 1971; Cooke, 1977; Frith, 1977; King and Wheeler, 1981; Long, 1988).

MATERIALS AND METHODS

A postal survey was carried out in 1981 by sending questionnaires to all pastoral stations in the State, and to licensed kangaroo shooters and Agriculture Protection Board personnel in the pastoral areas. Additional information was gathered from published survey results, W.A. Museum records and from my own unpublished records. An earlier survey of rabbit distribution in the southwest of the state had been made when samples of rabbits were collected throughout the area by Agriculture Protection Board personnel between 1967 and 1971.

RESULTS

Localities in the pastoral areas of Western Australia where rabbits were known to occur in 1981 and locations where they were reported as not occurring are shown in Fig. 1. Detailed lists of locations are available from the editor.

DISCUSSION

Rabbits occur throughout the southwest (unpublished A.P.B. report; Myers 1971; King and Wheeler 1981; Long 1988) and in most of the semi-arid and arid parts of the State, including a number of localities within the Great Victoria, Gibson and Great Sandy deserts, and reach the southern edge of the East and West Kimberley districts (Fig. 1). There are still large areas of the state, in the Ashburton, Pilbara and Kimberley districts, where they do not occur. Although they extend north of the distribution shown by Myers and Parker (1965), all known populations of rabbits in Western Australia are within the theoretical limits of distribution given by Cooke (1977) and indicated on Fig. 1. These suggested limits were based on the belief that increasing reproductive difficulties caused by climatic stresses would limit their northern distribution. A rabbit was reported to have been killed in 1912 or 1913 at Fitzroy Crossing which is north of their current northern limit in Western Australia (Long 1988). They have not become established in the Kimberley in the subsequent 75 years. Low and Strong (1981) considered that rabbits in the Northern Territory had reached the northern limits of their distribution by 1920.

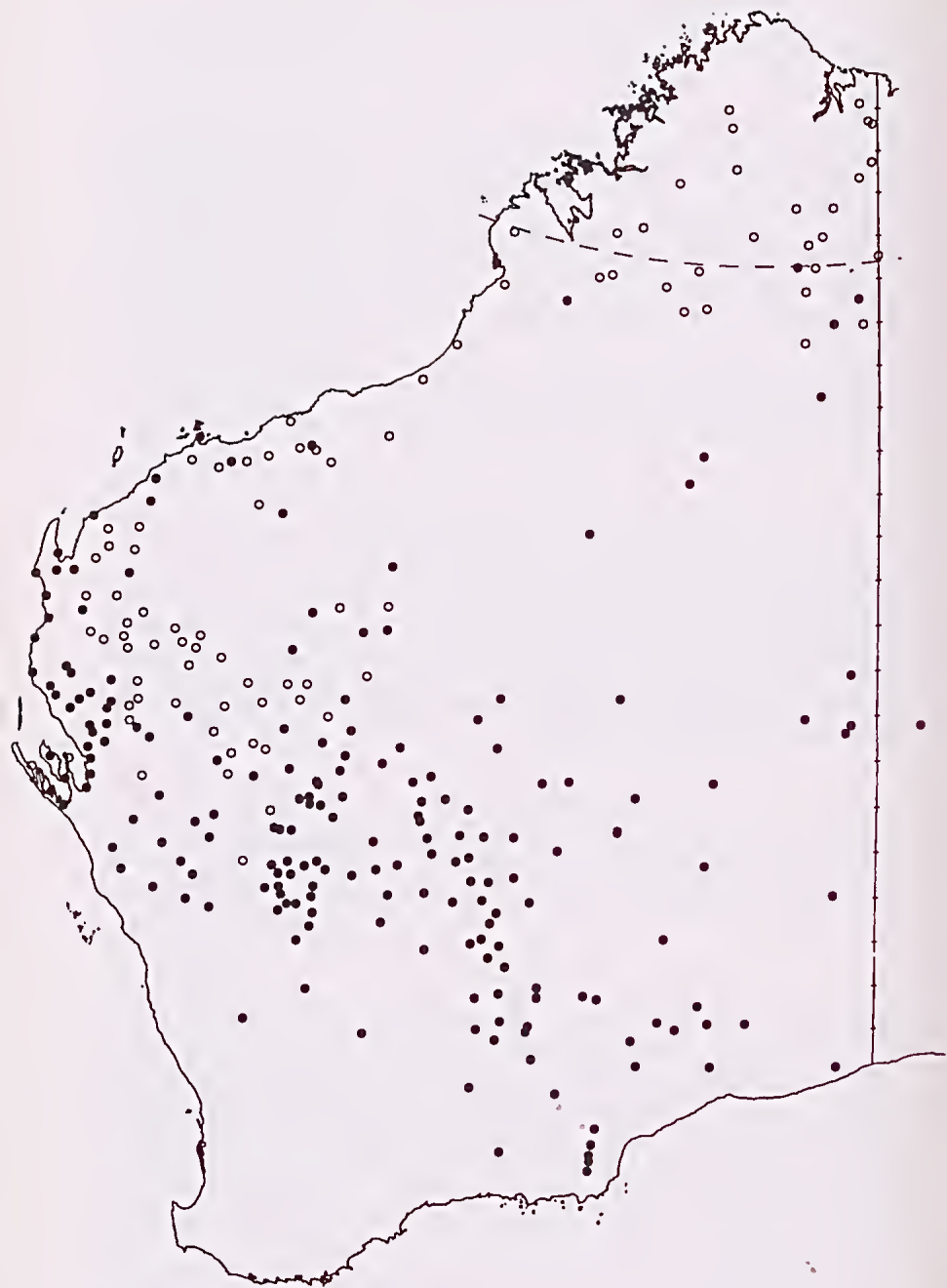


Figure 1. Locations where rabbits were reported (●) to occur or (○) not occur in the pastoral areas of Western Australia. The theoretical northern limit of distribution (Cooke 1977) is also indicated by the dotted line.

The populations of rabbits which occur near the southern edge of the West Kimberley region are an extension of those found in the Tanami Desert, at the northern limit of their distribution in the Northern Territory (Low and Strong, 1981).

Areas in the semi-arid Ashburton and Pilbara regions devoid of rabbits (Fig. 1) are mainly those with shallow soils unsuitable for warrens (Parer and Libke 1985). Individuals are occasionally sighted in these areas, but populations do not appear to have become established. The dominant vegetation in these areas is composed of *Triodia* spp., which is generally considered to provide unsuitable habitat for rabbits. The distribution of rabbits in the semi-arid regions of Western Australia seems to be broadly related to the distribution of halophytic shrublands, dominated by *Atriplex*, *Kochia* and *Halosarcia* spp. Parer and Libke (1985) state that rabbits living in areas with high summer soil temperatures must have access to free water, succulent vegetation, shaded warrens or warrens on calcareous soils. Drought-tolerant chenopods have been shown to be an important source of water for rabbits in arid regions (Cooke 1982).

The current distribution of rabbits in Western Australia probably covers all the habitat suitable for them, except for some islands which they have not reached. Rabbits have had a highly detrimental impact on the native flora and fauna of Australia which may have been most serious in the pastoral areas (Ratcliffe 1959). Successive years of above-average rainfall in arid regions can result in a build-up of rabbit numbers which can have a very severe impact on the vegetation as it dries off (Cooke 1982). There are few published data on fluctuations in the size of rabbit populations in pastoral areas of Western Australia. Small fluctuations occur between years on 2 pastoral properties on the west coast (King et al 1983). A population near Rawlinna, on the edge of the Nullarbor Plain, showed the large fluctuations in numbers (Brooker 1977, Brooker and Ridpath 1980) which are typical of populations in arid regions (Myers 1971). Thus it is likely that in other semi-arid and arid regions of Western Australia the numbers of rabbits also fluctuate widely in response to seasonal conditions.

Most pastoralists who replied to the questionnaire did not feel that rabbits caused damage to their properties (69%) or that there was any need for control measures to be used against them in pastoral areas (96%) as they believed that their numbers were adequately controlled by drought, predators and diseases. Rabbit control measures in the pastoral areas of Western Australia are unlikely to be cost-effective in terms of their cost to primary production (King et al 1983) but could be worthwhile in areas which are of particular importance for the conservation of native flora and fauna. It seems unlikely that rabbits will spread into the areas of mainland Western Australia where they do not now occur, and they should pose no threat to the flora and fauna of those regions.

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